

L'agriculture Naturelle ou Synergétique (France)

La culture de la terre en synergie de Marc Bonfils et Emilia Hazelip
by Kali De Keyser

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The Synergistic Garden: A Teaching Video

by Emilia Hazelip

"An educational video on no-till synergistic gardening is now available. It describes the step-by-step process developed by Emilia Hazelip to create an ecological agriculture. She became interested in Fukuoka's work in 1978 when the book *The One Straw Revolution* was published. Since 1937 the Japanese microbiologist and farmer, Masanobu Fukuoka, has been working for the development of a truly ecological agriculture. This video shows the cultural and climatological adaptations that Mrs. Hazelip has developed in the course of years of research into a no-till system that she has named "Synergistic Agriculture."

El Trabajo de Masanobu Fukuoka, por Zen (Uruguay)

by Lucía Battegazzore

La Permacultura en Uruguay

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Greek Natural Farming

Do you love Nature? Ecotourism and Natural Farming

by Massimo Conte

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ON A GREEN MOUNTAIN

With Masanobu Fukuoka

Sensei of Natural Farming

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"The ultimate goal of farming is not the growing of crops,
but the cultivation and perfection of human beings." (1)

Masanobu Fukuoka

In October of 1994, I traveled to Japan with a team working on a book about the leading methods of sustainable agriculture found around the world. Members included project director Howard Shapiro, writer Catherine Yronwode; myself as photographer; publisher Anthony Rodale; and poet Naomi Otsubo Ash, our guide and translator from Tokyo.

We arrived in Osaka with the unsettled weather that precedes a typhoon. Next morning, under thick clouds we flew over the inland Sea to Iyo City on the Island of Shikoku. We traveled by trolley and train through densely populated neighborhoods where dazzling signs advertised many expensive things. Fat marbled Kobe beef was the most astonishing at \$80 a pound. Valuable lots in town lay closely planted with vegetables, rice and flowers. In more suburban areas railside gardens grew large and more varied in fruit and seed.

We arrived after noon near the sea coast and checked into an old hotel. After a brief rest and tea we prepared to meet the venerable Masanobu Fukuoka. He was born in 1913, of a family that has farmed the region for over 1400 years. Educated as a microbiologist, he is now a Mahayana Buddhist who practices simple agriculture as a spiritual path. He is the father and master teacher, the Sensei of the art of Natural Farming.

A taxi took us to his home at the edge of town where the rice fields and hillside orchards began. We were greeted at the door by Mrs. Fukuoka and politely invited inside. Mr. Fukuoka soon hobbled in on stiff legs bent with age. He was wiry and alert, and wore a loose blue farmer's pants and shirt. With his simple clothes, and wispy hair and beard, he reminded me of white clouds in a midday sky.

We each bowed, and settled onto the floor around a chabudai, a low table in the middle of a simply appointed room. Shoji rice paper doors slid shut from outside, and we were surrounded by an awkward silence.

Mr. Fukuoka looked at each of us, then asked through Naomi, "Why are you here?"

Howard replied, "We have come for answers to a list of questions about Natural Farming for a book on global sustainable agriculture."

"Questions, what questions?" Mr. Fukuoka inquired.

Howard showed him a list of standard questions prepared for those to be interviewed for the book. They were mostly technical details related to such things as design, soil, tilling, mulch, fertilizers, pests and weed control--gardening and farming methods broken down for ease of review.

Mr. Fukuoka took the questions, paged through them, and frowned. "No thank you very much!", he said sternly. "Do you understand anything about Natural Farming?"

"Yes," said Howard, "but we want to hear it directly from you and share your knowledge and experience with the world."

"No," Mr. Fukuoka replied brusquely, "I do not think you really understand. If you wish, take my books, study them tonight, and if you still want to learn about Natural Farming, come back tomorrow morning."

returned to town, wandered around the market place, then went to our hotel in confusion. Mr. Fukuoka had sent us away with many things to read, including The Natural Way of Farming, The Road Back to Nature, and The One-Straw Revolution.

Reading through the evening, I learned about the profound vision of Nature revealed to him at age twenty five that led to his holistic philosophy. He recalled how in the depths of doubt and dark depression, a night heron's cry at dawn awoke him to Nature's perfection. He then described experimenting for scores of seasons with farming methods that imitate the natural cycles of birth and decay. Most intriguing of all was his idea of seed balls for promoting plant growth under difficult conditions. He lamented not training more students and expressed concern that simple ways of farming might be suppressed or lost just when the world most needs them.

In the morning, warm heavy air forecast the gathering storm as we hurried along to meet Mr. Fukuoka. He was somewhat more willing to talk when we arrived and wanted to know, "Have you read the books?"

We affirmed so, as much as possible.

"Did you understand?" he asked.

"Yes," said Howard, "but we would like to go over the list of questions just to be sure."

"Shaking his head Mr. Fukuoka said, "If you are still interested in learning about Natural Farming, go with my daughter and her helpers to the citrus orchards, then come back this afternoon."

Naomi, Cat and Anthony rode silently with his daughter, while Howard and I squeezed into a utility truck with a young man who spoke fluent English. He sped up a steep road that turned into a trail through dense forests of mandarin oranges. We soon crested the ridge and stopped in the mist surrounded by trees heavy with green fruit.

The hired orchard workers walked in all directions casually scattering seed. They tossed them under and between the trees, into open spaces and off down the hillsides below. We saw dried radish stalks, clover and green grasses everywhere, even under ridgeline cedars and among the oaks, maples, pines, and acacias.

It took only fifteen minutes to seed several acres. Then we boarded the trucks and rolled into a valley filled with fruit trees, horse chestnuts and huge bamboo. Again workers broadcast seed, and I asked if I could take pictures. One man agreed so I moved in for a shot of his hands. I was startled to see dozens of kinds of seeds, many clothed in the vivid chemical colors of biocides. "How could this be on a natural farm?" I quietly asked myself.

Cold rain came in earnest and we started back. In route I asked about the treated seeds. The worker said the younger family members consider it too risky to practice strict Natural Farming. It is really hard to find people who understand Mr. Fukuoka's philosophy and recognize orchard plants easily. It seems modern farmers no longer work closely with soil, so each day fewer people know how to grow healthy food.

After lunch, we returned by taxi and hurried onto the portal to remove our wet coats and shoes. The door opened and we were let in, then like a whirlwind he gave us a lecture on "Not Doing".

Energetically he said, "Most farmers begin by asking, what if I do this or what if I do that, but only dissipate themselves that way. My approach just the opposite, seek the pleasant, natural way of farming. In order to make the work easier, not harder, I ask, how about not doing this or how about

Who Practices Natural Farming Or Uses Seed Balls?

Please send all information about practical applications of natural farming and seed balls from anywhere in the world. I will post the information here with contacts and addresses so people interested in exchanging information can do so. People, places, farms, restoration sites, experiments, discoveries, questions and answers, all welcome.

Send To: jimbones@seedballs.com

Green Belt Southern Europe

Recent Work Of Masanobu Fukuoka In Europe And Around The World

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Australia Adapts Seed Balls For Tree Planting

Seed Balls As A National Way To Reforest The Great Desert Continent

Kenton Range Tree Farm, Australia
Seed Balls For Reforestation
(PDF File In Acrobat Reader)

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No-Till, Mulch-Based Market Gardening

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With an air of finality he looked at each of us; then said, "You cannot compare my ways to those of anyone else by breaking them down. Do not try to mix ideas. You will only confuse people and fail. Give yourself to whatever you do one-hundred per cent or not at all, and do not doubt. Everything will be all right. Just spread seed balls and Nature will do the rest." As we left, Naomi politely told him we would get in touch about books soon, and that we hoped to see him again. He replied, "Take your time. Anyway, time does not exist."

Our last day in Japan dawned calm with thin clouds, so Howard and I ran to the old orchard for a final look. I worked along a narrow path to the top of the hill where Sensei's tiny mud and bamboo hut sat entwined in massive wisteria. Its simplicity was liberating, having only a roof, sliding panels for walls, and an open hearth in the middle. Pots, pans, utensils, hand tools and a futon lay on the floor. High on one wall of the dojo was a single drawing of Nature's Mountain, a distillation of all he had taught us the day before.

Not yet satisfied with the whole view, Howard knocked about inside for inspiration while I desperately searched the orchard for suitable parts to photograph. The edible vines, fruit trees and shrubs were obvious, as were the grains, but where were the abundant vegetable crops? Where were the progeny of the seed balls that replanted themselves year after year?

Howard stepped out and called, "We have to go or miss our flight. I'll give you a hand with the cameras." He started down, and in a panic I shouted, "I feel like it's all around me, but I can't quite picture it." He reached for my pack and I asked, "By the way, what are these knee deep weeds, do you know?" As he leaned closer and I kneeled to the ground, thousands of intertwined daikons, sweet potatoes, cabbages, carrots, beans, kudzus, kiwis, and more, began to reveal themselves. "My God, this is it!" I exclaimed, "We are standing on an edible forest floor." Lush green and wet with dew, we too were enfolded in the transcendent fruit of a lifetime devoted to bringing people and Nature together again.

Foot Notes:

(1) Beginning quote from The Close To Nature Garden, a video tape produced by Rodale Press, available from Arthur Mokin Productions, Inc., P. O. Box 1866, Santa Rosa, California, 95402, Telephone: (707) 542-4868.

(2) God, Kami or Kamisama is the Divine power found in natural objects and all living things.

(3) 1,000 square meters = 9,300 square feet. Natural Farming practice requires a minimum area of about 2,000 square feet per person to live on sustainably with a vegetarian diet. For reference, Biointensive Sustainable Mini-Farming practice, developed by John Jeavons, requires a minimum area of about 4,000 square feet per person to live on sustainably with a vegetarian diet. Permaculture Design practice, developed by Bill Mollison, requires a minimum area of about 6,000 square feet per person to live on sustainably with a predominately vegetarian diet. Modern conventional farming practice requires a minimum area of about 10,000 to 40,000 square feet per person to live on according to diet, vegetarian or meat eating, and is not sustainable.

Books:

The One-Straw Revolution, a philosophy, published by the Rodale Institute, 33 East Minor Street, Emmaus, Pennsylvania, 18098.

The Natural Way of Farming, a manual, and The Road Back to Nature, a history, published by Japan Publications, Inc., Tokyo, Japan, & New York, U.S.A., distributed by Kodansha International/U.S.A., Ltd., Farrar, Straus and Giroux, 19 Union Square West, New York, New York, 10003.

The Ultimatum of GOD NATURE The One-Straw Revolution A RECAPITULATION, an English revision of the original One-Straw Revolution, published in 1996, in Japan, available from Mr. Fukuoka at: 201-2 Ohira, Ivo-Shi Ehime, Japan 799-31 Fax: 08-99-83-1892

not doing that? By actual practice I finally reached conclusion there is no need to plow, no need to apply artificial fertilizer, no need to use pesticides at all. Most of the work of farming is created by tampering with Nature which causes negative side effects. Very few agricultural practices are even necessary, just scattering seed, spreading straw on the soil and harvesting."

Concerning soil and plant systems, he stated, "The secret of growing grain is as simple as the symbiosis of rice, barley or wheat, and clover." In October he broadcasts clover and barley over the ripening heads of rice. A few weeks later harvester actually trample the seedlings, but they recover quickly. The gathered rice is dried for three days, thrashed, and the uncut straw scattered randomly back on the field. If ducks or chickens are not free to roam then occasionally he adds a little manure as well.

Before the New Year arrives he coats rice seeds with clay and broadcasts them over green barley, the waits for spring to come. By harvest in May the winter crop is ripe, white clover covers the field, and rice shoots are sprouting from clay pellets. Barley is harvested, dried and thrashed, and the uncut straw mulch is again returned to the field. He then floods for five or six days, just to weaken the clover while the young rice shoots break through. In June and July his field goes dry though his neighbors keep theirs under water. In August he irrigates every week or ten days. "That's about all there is until harvest," he said, "And the cycles begin again."

There was a lull in the discourse so Howard brought up the questions.

"No," Mr. Fukuoka shook his head, "Go to my old hillside orchard. See for yourself. If you are still interested come back tomorrow morning."

Just past the rice fields we found a new asphalt road that ended near the entrance to a forest on round green hills. From there a broken cement lane climbed sharply, then ended abruptly. Only a footpath continued on through deep old woods.

Another way circled back toward a clearing with work sheds and a forty foot high, wide open classroom that spiraled toward an overcast sky. Dark weathered straw covered the platform floor where, placed carefully to one side, lay several clay-coated wooden rollers.

Left in disorder were carved beams, a wooden mill for cleaning seeds, a steel cement mixer, handmade shovels, sickles, rakes and hoes. Everything was covered with dirt and leaves, as though completely forgotten. Feeling the emptiness I thought, where are his students, the future teachers, the ones who once used these rusty tools? When he finally departs, will anyone notice, and save his treasured orchards and farm? Except for the wind, like a voice in my head, all else fell utterly silent.

Chilled, I walked north on a path that tunneled into new growth, strange at first to my western eyes. Then I began to recognize old friends like mulberry, sumac, acacia and fig. I found myself in a small meadow grown wild, and to the untrained eye, abandoned. Iyo gleamed below, new and pulsating, while above, the early autumn orchard possessed a timeless feeling. The wind rose and the light died as a frustrating rain forced us back to town for another anxious night of waiting.

We all went to Mr. Fukuoka's hilltop orchard at first light, although the day was ominous, still and cloudy. I clattered around with my cameras and tripod as the others searched about. I had photographed the pagoda and rollers, and had just moved on to the seed mill, when Howard said simply, "Have a look at this".

Lifting the wet cover from the cement mixer, he reached in and pulled out incredible jewels, just like the ones in the books. Between his fingers were three brown clay balls, half an inch in diameter, each bursting with germinating seeds. The typhoon rains had brought them to life in spite of a prolonged drought.

unbound Nature can be. Around us grew peach, plum, maple, citrus, pine, acacia, melon vines and scores of plants we could not identify. The ground was littered with twigs, straw, clover and grasses, countless emerald leaves that wove a deep tapestry. And there was no bare earth at all!

Cat called out ginko, persimmon, hydrangea, and oak, then asked, "Is this a dawn redwood?" Howard found a cypress copse patiently trimmed for poles, with trees growing straight and tall. Naomi wandered blissfully throughout, exploring the reassuring forest, while I was stilled by the hollow music of silver bamboo gently clicking. Anthony strolled off alone looking for solitude and more open views of the fish pond in the valley below.

As our appointment neared we walked quickly back through neat paddy fields, some with green unharvested rice, others with pale seeded straw fresh cut and hung to dry. Only later would we understand that on the way we had passed Masanobu Fukuoka's natural field of maturing grain.

Mr. Fukuoka received us inside, then inquired, what had we found? He listened as we recited our morning highlights, then asked us one by one about our religious or spiritual background. Attentive to each reply, he sat quietly studying our faces, gauging I think, how much he could share. "Ignorance, hatred and greed are killing Nature," he said. "Down, down, everything goes. As we kill Nature, we are killing ourselves, and God incarnate as the world as well."(2)

"The world is digging itself into a bottomless pit with modern agriculture," he admonished. "The simple hearth of the small farm is the true center of our universe. Scientific thought is leading you away from a healthy life. Even the practice of conventional organic agriculture is a dangerous regression. It cannot be sustained if you have to rob one part of the earth to feed another."

Mr. Fukuoka described his oriental view of evolution, from before the beginning of particle birth to very present. As the material universe expands, he explained, all Life follows the same harmonious pattern of inwardly spiraling energy toward the Nothingness, called "Mu".

He told how Darwin's linear vision was clouded and incomplete, due to western "deconstructionist" thoughts. Blind to a total reality of Nature, Darwin saw figure and ground reversed and so found only struggle and competition, where unity of function exists. The Great Way, Sensei explained, has no parts, no disease. Only faults when seen in parts.

He told us the evolutionary process itself is not just singular and branching like a tree, but cyclic, more like a multitude of volcanic islands emerging and subsiding from the same sea floor. All kinds of creatures have grown simultaneously, from universal progenitors, according to the rise and fall of their individual genes. Yet by common origin each shares traits that prove the overall Oneness of Being.

He monera, he said, the bacteria and algae, the single-celled creatures so simple in structure, yet no less advanced hold a common bond with the rest of us, as co-descendants from the very beginning. Countless parallel punctuated evolutions, webbed and interconnected, derived the greatest diversity of forms from Ichiban, the original ones, that have always lived within, without, and beside us. When new kinds of food appear, new life forms in turn develop to eat them, and eventually everything becomes food for the Great One, in a perfect, self-balancing way.

Suddenly he left the room, then reappeared with a heavy polished stone. Rippling through it were orange and black bands of oxidized sediment and fossil bacteria, three and a half billion years old. He leaned slightly forward and without a word placed the ancestors in the palms of my hands! "Come back in two hours," he nodded, and dismissed us.

I returned a little early and sat on the porch to rest, but the door flew open and Mr. Fukuoka immediately asked us in. He left the room two or three times to gather books and art supplies. Finally he nodded, spread rice paper on the floor, and with brush and ink, sat ready to calligraph his story.

turned to Naomi for a moment, then looked up and explained, "is very interesting, that flower changed color as soil changed. I planted it to check if soil acid or alkali, but realized that kind of scientific observation is not necessary, so now I just spread seeds and let Nature do the work."

"Very scientific. Natural Farming is described as science beyond science. Natural Farm techniques are based on cycles. If you see how the Natural Farm looks, you will understand. It is Nature, or God's design itself. Ideas and patterns by that fellow, Bill Mollison of Permaculture Design, if he practiced Natural Farming, waste no time, arrive at same thing. If you go home and make seed balls, it will be all right, even if you do not know everything. But if you expect results, you might fail. Just do it. Do not doubt!"

Raising his hand he said, "I know you feel you must ask a lot of questions, but if you just believe, I will show you a secret." He climbed stiffly to his feet, left the room and returned with two rice plants, one tall and spindly, the other short, robust and heavy-headed, both wrapped in newspaper, muddy roots and all. I asked if he had grown them himself. "Yes, this one," he said, pointing to the vigorous plant. "The other is from a neighbor's field." We moved closer for a better look, and I asked how many grains were on each head.

"How many do you think?" he answered, and Howard suggested maybe one hundred to one hundred and twenty five for normal high yield.

"About two hundred grains," he claimed. "Farmers plant one square meter with fifteen plants, count stalks, twenty each plant, thirty thousand grains. I put ten balls in same area, had thirty plants, each plant two hundred grains, best harvest scientifically, sixty thousand grains, also stronger plants. Theoretically, this is the ideal rice production. It is impossible to produce more than that, you see? Because on Natural Farm, plants can absorb one-hundred per cent of the energy from sunshine. No artificial fertilizer, so plants have power to absorb all available sunshine. That is limiting factor on how much plants can produce."

Cat wanted to know if he had developed it by selection or breeding. "First I tried breeding," he replied, "But realized bugs were doing same thing, so I just let them, and now look for new kinds. I always have new varieties of rice appearing in my field. Much of the brown rice you eat in America today came from my field. Yours is brother to mine. Years ago I gave a few grains to two men, but they only took it, bred it and now sell it, without reward to me or using the money for Natural Farming. I only asked one percent of profit be promised for protection of environment, any more must be used for educating about natural ways. But I gave seeds before a contract was signed. They went ahead without permission, I only hope they are using profit in good ways, but I have not heard."

"With breeding by bugs, scientific breeding is not necessary. Now I know human beings are fools. I found out that what I was doing was not necessary. I have studied for fifty years, I did not need to. When I was twenty five years old, I came to this conclusion. And after fifty years, I reached the same conclusion. We do not need to do anything. But people know it is very difficult to do nothing, when no Nature is left, and desertification is spreading. So, I made seed balls. Sowing seed balls is the necessary minimum that must be done."

I pestered him about when I should put out the seed balls, in fall, winter, or wait until spring. "No time, no place special," he answered patiently. "You have to decide, even if snow is falling, seeds do not sprout. That all there is to it. First roots sprout, different from ordinary idea."

Then he shifted deliberately to the need to reprint his books, most of which are difficult to find. Anthony, whose father produced the first English edition, wanted to know in how many other

languages The One-Straw Revolution had appeared. At least eleven we were told. "How many of those publishers got permission," he asked? "None, no one," Mr. Fukuoka shrugged. He could not ask the poor countries for money he said, and the rest just published for free. Next time, Mr. Fukuoka said, he would like to republish The One-Straw Revolution himself, and then arrange for some kind of distribution.

"In Bangladesh, India, Africa, Europe, America, many, many locations, I have demonstrated it is possible to stop the advance of man-made deserts with Natural Farming, and bring back green plants for food and shelter. But some governments interfered, and in places called the people seditious when they became well fed and independent. Although able in one year to re-grow small edible forest, poor people were forced to return to chemically dependent agriculture. No thank you! In Somalia, you brought food with guns, but only those with guns got food, so you should only send seed in future."

"When I went to Somalia, I looked down on the land from an airplane. People say that there is no water, but there is! I found a large, two hundred meter wide, river disappearing suddenly in the desert. Where did it go? Underground! If you dig two meters down, you will feel moisture. So if we sow plants whose roots reach two meters, they will get water and grow."

"Africa has only three per cent of its jungle left from eighty years ago. Since people in Africa, after European colonization, started growing only a few kinds of plants for export, like coffee, tea, corn and cotton, the desert has been spreading. This unbalanced agriculture contributed to desertification. The governments in Africa take seeds away from people so that they cannot be self-sufficient and have to start producing cash crops that only benefit the leaders."

"He held up a book and said, "Look at these pictures. People from the government here in Somalia, have been planting only a few kinds of trees such as eucalyptus, and have given them eighteen tons of water, eight times a day. But half of them have died. They wanted to know why. I told them not to water them. It prevented the roots from growing deep because the plants were satisfied with the surface water. I advised them to change the kinds of plants they were using. I suggested acacia, whose roots grow two meters within the week they sprout. And also sow vegetable seeds with acacias."

"Seed is sentient," he said. "Very small seed goes down into dirt. It only one who knows how to make plants, fruits. Begin with acacia. Acacia says, 'Water, no thank you,' sends root down one meter, two meter, bring up water. Then plant watermelon, sweet potato, daikon in shade. Protect with brush so camels and goats stay out of green belt and in time, with seed balls, all saved."

"At first, the government did not like this idea. But they allowed people to sow vegetable seeds, but only in gardens. Seeds! Seeds are the best gifts to Africa, in Somalia, I was told by the police not to give seeds to people. Otherwise, I would be arrested. But I did. Children were the first people who came to me to get seeds. When the children sowed them, they sprouted. When the young people saw that, they came and asked me to give them seeds. I, of course did it. They started sowing seeds in the desert. A young man who sowed one of my seeds, watched the seed for three days without sleeping until it sprouted. Watching one seed! Look," he showed us another picture, "You see, even orange trees grew one meter in two years. So it is easy to convert to fruit trees in Africa."

Changing directions, Cat asked, "What about over-population?" He thought for a moment then answered, "Population, the question sounds important. But it is totally wrong to try to solve all problems by controlling population. Animals do not do this. God has a plan. If God makes people, God makes food for them. There is food and dinosaurs appear. There is food and humans appear. We

make deserts. If we make deserts green, we can all eat. How many human beings can be fed by Natural Farming? You have that question because you think human beings make human beings. But we do not even know why frogs or ants are born. When there is enough food for five million people, five million people will be born. God's plan is perfect. But, only when human beings stop destroying Nature, can we survive. Because of the degree of this destruction, we have put ourselves in a situation where we have to control population."

Cat persisted, asking for a comment on whether there would be a temporary food shortage until Natural Farming on a big scale could take off. Mr. Fukuoka shook his head, "No problem. If all Japanese were farmers, not impossible to do. With Natural Farming, in Japan five people can live on one thousand square meters of land. If people see this they cannot say all will get the same results. Not easy, but it can be done." (3)

He began his long discourse simply: "What I want to tell you is that it is not human beings who create and grow plants. I want to talk about the roots of things in the world we cannot express with words, the world we cannot usually see. When we sow seed, we think we will grow plants. But actually plants grow without our knowledge or care. When we accumulate knowledge, we get lost. Accumulation of knowledge brings about our own ruin. I deny knowledge. God creates and grows plants. So, my foreign friends call me, "A Man Doing Nothing." These ideas of mine about Nature came to me when I was twenty five years old. People think that I must have gotten this idea through my fifty years of agricultural study. No! But it is impossible for me to describe the moment that suddenly changed my ideas."

"On this planet we do not have something we can call Nature any more. We have lost it. We do not have Nature we can go back to. What we must do is search for Nature. But human knowledge cannot do it. We can only ask Nature. So we, and especially seed companies in the world, should collect all kinds of seeds on the planet and offer them to God, Nature, and pray. This kind of attitude toward Nature is necessary. Of course, even if we pray, God will not say anything. We may not be inspired, either. But the plants which start growing are God's answer. Nature will teach you."

"Cultivating land is not good. It removes the green cover and exposes the bacteria to sunshine. Just as we need clothes to protect our skin from sunshine, our planet needs green. I have used my farm for five consecutive years. There is no need to let it take a rest because I have never cultivated it. If you just sow clay seed balls with one hundred kinds of seeds, do not worry about water. Where there is green, water comes. Do not think I do this, for only God has created perfect things."

He completed a drawing, then as the silence grew long, we asked how he got the idea of seed balls. He replied, "You know that daikon radish seeds are in hard shells, well, I noticed that when they drop on the ground, they decay as they start to sprout. So I realized if they need a shell like that, then clay can be the shell for a ball with many seeds inside."

Amazed, I said, "So they do not have to sprout on the surface, they have the protection of the clay shell to begin with, and soil and moisture. Its a small earth, a miniature earth, how beautiful, and so simple." He regarded us carefully then said, "Many people are interested in seed balls, but they do not act. I love best to give children boxes of seeds as gifts because they scatter them so innocently."

"Seed balls need at least one hundred kinds of seeds," he then asserted. "One seed eventually makes ten thousand seeds. If you sow seed balls, and wait three years, you will understand what Nature is. It works much better than reading books about Natural Farming. Seed balls are a small universe in themselves. I have written six books, but I was unable to express what Nature is in words. So I decided to manifest Nature in form. A seed ball is a one centimeter model of a Natural Farm, with trees, fruits, vegetables and grains. I do not say my one hundred kinds of seeds are the best. It is just an entrance to Natural Farming."

"God's love grows plants. Nature grows crops. Birds sow seeds. In three years, even the soil starts changing spontaneously. There are no ideas like big or small, strong or weak, rich or poor, in Nature. No idea like 'the struggle for existence'. There are bugs and diseases, but they do not cause problems. Many kinds of bugs co-exist in natural harmony. We cannot know why plants grow. I dare say, God's love. For example, the soil on my mountain is the same as that in the deserts and was not green fifty years ago. But now, even though I have not changed the soil, plants grow there."

"In the beginning, man-made deserts were also green," he cautioned, "And the most important thing is to stop the advancement of arid lands around the world today." He said we can do this quickly by spreading seeds, hundreds of different kinds suitable to each locality, by the ton, from airplanes. His method involves making half inch balls like those we had found, containing hundreds of mixed seeds, microbes and humus, all rolled inside protective clay coatings. Clay shells defend the seeds from drought, insects, rodents and birds that would otherwise eat them before they sprout. Timely rains then release the seeds and no matter where they land something appropriate inside will grow. Once established, the resulting plants naturally reseed themselves with the help of gravity, wind, water.

big mistake, I do not do it any more. You can check that trees planted by birds are really straight, row two meters per year. Check how old by branching. Roots like this," he drew out the motion, Upper parts of tree are the same. If I go to desert now I say, 'I am a foolish old man,' and proceed that way."

Big trees, between forty and one hundred meters high, and short trees, are also needed," he explained. "If trees grow tall enough, to about one hundred meters, that indicates a one-hundred percent return of Nature in that area. Anyway we need trees of various heights. But I want to use three thousand kinds of seeds in Africa, because one hundred kinds are not enough. Unfortunately seeds are hard to get. It is easy to make seed balls, but we have to be careful in choosing seeds, especially for Africa. It all depends on the area, type of country, how quickly the desert is spreading and so on. Animals need to eat too, so spread seed balls over as large an area as possible. Otherwise, even as seeds sprout, they will be eaten."

I asked him exactly what clay to use for making the seed balls. "Red clay," he answered confidently, "like for tiles, red bricks, like the soil deep down. Red clays, not white porcelain clays. Point is, clay is shell, seeds should be protected like that. you must hide seeds so animals cannot see them. Diameter of seed balls should vary according to size of the seeds. A layer of soil humus and clay about two and one half times the collective diameter of the mixed seeds should cover the seed clusters. For aerial seed spreading, hardened clay covers all. Bigger seeds means bigger seed balls. Single seed crops like rice may have only one grain in each clay pellet. Huge seeds like coconuts just need to be covered."

'A clay ball has all the fertilizers needed in it, but they are 'sleeping'. Clay is sleeping soil. But water can wake it. People think that red clay has no value. But all fertilizers are in red clay. For example, nitrogen, calcium, many minerals are in red clay. To wake clay up we need 'cutting' with acids from rain and ground water, and acids from plant roots and organisms living around them."

"Many atoms are in seed balls. But they are sleeping, because they have not dissolved. Since they have not dissolved, plants cannot absorb them. Clay catches these components. To the components, red clay is like a blanket. We have to take the blanket off. To do that we need to 'cut with scissors'. The 'scissors' are green growing plants such as acacias and clovers and the carbonic acids produced around their roots. In seed balls, there is everything. You will see it if you check the elementary clay particles."

Red clay was the first soil when the Earth was made. People think that plants, fertilizers and soil are different. People think that lifeless things and bacteria are different. But all were in clay from the beginning. That is why I say, there is no need for chemical fertilizer. If you look at the elementary particles in clay you will understand. Seed balls have everything. That is the way I think about seed balls. Plants, animals, soil and everything are connected, brothers and sisters, relatives. But human beings are short-sighted and we cannot see that all are connected by love."

If we do nothing, mountains will be able to get their green cover back. Forty years ago, there were five or six people living here. At that time, my mountain could not easily recover its green. So I did not let people go to my mountain for a while. And trees started growing. Especially, these last four or five years, because I have not been able to go to my mountain very often. I am too old. Trees are growing bigger and bigger. Also more birds have come and they carry more seeds from the trees, and more trees are growing from the seed sowed by birds. These trees have a more natural shape and grow faster. Every year they bear fruit."

Most of the trees on my mountain are six or seven years old. The acacias are ten years old. I forgot when, but a man who planted trees in the Himalayas for sixteen years, and a man who planted trees in Bangladesh for four years came to me and learned how to make seed balls. Also there was an American woman and a Japanese priest. They came because they realized that they could not keep up with the speed of desertification by planting trees. They cut eight Japanese cypress on my mountain and made a place to stay. Japanese cypress are very expensive, so usually people do not use them to make a temporary lodge. But we did it to let people know that if you sow seed balls, it is easy to build

trees. Seed balls are the only way to catch up with the speed of desertification on our planet."

"Food, clothing and shelter are very easy. If you sow seed balls for just one hour in your life, you can have enough wood to build a few houses in your lifetime. You can make clothes from your plants. You can get food. One day of sowing for trees, one day for vegetables and fruit, one day for grains. If you sow seed balls of rice and barley in an area of one thousand square meters, you can get six hundred kilograms of each grain, which is enough for one family of five people for one year. If you work three or four days a year, you can have a good life."

"The power of Nature is great, because the natural structure is solid, three dimensional, not horizontal or two dimensional. Some of my mountain peach trees have kiwis climbing on them, and above the kiwi vines, there is a kind of melon. So three kinds of fruit exist together at different heights. I get one or two kilograms of fruit from one square meter of ground. This is a good sustainable yield. Natural production is greater than man-made production, because the structure is solid."

"On my mountain there is a place where I sowed seed balls twenty years ago and now it is like a jungle. But there are fruit trees and there are kiwis. Now I know that even in a place like a jungle, kiwis can grow. Humans are just destroying the power of Nature. We have only one-fourth of the growing power of Nature left. We are not increasing fertility or production, but rather trying to prevent production from failing by using fertilizers."

"We are only looking from the outside at Nature, not from the inside. There are a limitless number of points in time and space. For example, there is one point here, another there. You go right and left to accumulate knowledge." He filled a page with symbols and asked, "So, Naomi, where are you in this picture?" Deeply reflective, she replied that she was not there, and he smiled with approval.

He painted a mountain like Fujiyama, covered by streams and trees, with people toiling on the slopes. Then he asked the rest of us, "Where are you on this Mountain of Nature?" He watched us closely as we stumbled through our answers, then laughed; "No! You should be sleeping at the foot of the Mountain. Do nothing. Close your eyes and shut out the external world. This is the way to look at Nature, from inside."

"Sow seed balls with a child-like mind whenever, wherever, without judging the first year. During the second year birds or bugs will carry the seeds from the plants and sow them naturally for you. So in the third year you will get a natural design. Children sometimes sow seeds in unexpected places, and that brings us to a big discovery that we never even considered. Even if ninety-nine per cent fail, and only one percent succeed, that will take us to new possibilities. If you use human wisdom, you will only achieve the result you expect."

"I will give you an example, showing how Nature can teach us. After giving a lecture in California one summer I was asked by some young men to teach them how to survive on Natural Farming. They took me to their plain. I was surprised to see it. It was almost desert. I told them that the land was too bad and that I could not help them. But I looked around and saw a spring. I stayed there one night and the next morning, I went to the spring to wash my face. There was a mouse burrow next to the spring, and when people washed themselves, water spilled down the hole. I looked into the hole and found green plants. I realized that the soil there was not dead, the seeds were just sleeping through the heat of the summer, and if we watered them they must sprout."

"I awoke the young men and started sowing vegetable seeds on the plain and watered the land. In a few days foxtail grass, a weed, sprouted. But in a week, it had all died because of the summer heat,

and after that the vegetables also sprouted. So Nature, the mouse burrow, taught me that this plain was turning into desert because only a few weeds like foxtail were covering it. Nature also taught us the way to kill those weeds and turn the desert into a vegetable garden. Human beings have no way of learning except from Nature. Only God has been creating and we have only transformed what God has created. What God creates is Truth, Goodness and Beauty."